

Management of Acute Inflammatory Lesions

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Acute inflammatory lesions should not be treated with heat producing agents. The cardinal clinical signs of an acute inflammatory lesion are swelling (tumor), redness (rubor), heat (calor), and pain (dolor). The physiological response by body tissues to the application of heat is swelling (partially due to histamine release), redness (resulting from hyperemia), and heat (due to increased blood flow and cellular metabolic rate). Pain is commonly relieved by such a modality probably as a result of the gate control mechanism.

Because the heat producing modalities result physiologically in three of the four cardinal features of the acute inflammatory reaction, applying such an agent to acutely inflamed tissues would superimpose the elements of one acute inflammatory reaction upon another and would thereby enhance the pathological process.

Obviously, cryotherapy would be the initial modality of choice in lesions of traumatic origin, but this is the opposite of a thermal agent.

Heat producing agents are properly reserved for chronic inflammatory lesions.

Chronic inflammation is commonly characterized by the presence of more cell proliferation and connective tissue than exudate with the presence of lymphocytes and plasma cells rather than polymorphonuclear leukocytes. Cicatricial tissue is more characteristic of chronic inflammation as well.

Cellular changes found in chronic inflammatory reactions commonly involve a reduction in local cellular function and/or replacement of typical cell types for the tissue in question with connective tissue (scar). The agents employed in the treatment of such lesions provide for physical and physiological improvement in such changes. Increased blood flow to the part enhances the bioavailability of intracellular nutrients, the drainage of waste products and transudates or exudates due to outflow, and the gradual replacement of more appropriate cell types being among these improvements. Collagen tissue may be replaced by areolar tissue in some cases, or fibrous connective tissue may be separated or reduced in length, thereby allowing for greater functional range of motion.

Heat producing agents are therefore contraindicated in the treatment of acute inflammatory lesions.

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